U.S. Patent Application Inventors: Nicholas V. Nechitailo Our Ref.: A7965

What is claimed:

1. An optical fiber cable configuration, comprising:

an outer protective sheath formed from a piece of wound composite tape;

a plurality of stacks which are stranded to be radially positioned within said outer protective sheath, wherein each of said plurality of stacks includes a plurality of buffer tubes.

- 2. The optical fiber cable configuration of claim 1, wherein each of said plurality of stacks is formed to have one of a triangular and trapezoidal shape.
- 3. The optical fiber cable configuration of claim 1, wherein said buffer tubes each contain at least one optical fiber.
- 4. The optical fiber cable configuration of claim 1, wherein said buffer tubes each contain at least one optical fiber ribbon.
- 5. The optical fiber cable configuration of claim 1, wherein said plurality of stacks each have an outer portion formed from a wound piece of composite tape, which respectively supports said plurality of buffer tubes within each of said stacks.
- 6. The optical fiber cable configuration of claim 3, wherein each of said buffer tubes has an outer portion formed from a wound piece of composite tape, which supports said optical fiber contained in said buffer tube.

5

7. The optical fiber cable configuration of claim 4, wherein each of said buffer tubes has an outer portion formed from a wound piece of composite tape, which supports said optical fiber ribbon contained in said buffer tube.

8. The optical fiber cable configuration of claim 6, wherein said at least one optical fiber is surrounded with gel.

9. The optical fiber cable configuration of claim 7, wherein said optical fiber is surrounded with gel.

10. The optical fiber cable configuration of claim 1, further comprising an axial member which is centrally positioned with respect to said outer protective sheath, and is formed from a wound piece of composite tape.

11. An optical fiber cable configuration, comprising:
a first buffer tube formed from a piece of wound composite tape; and
at least one optical fiber disposed in said first buffer tube.

12. The optical fiber cable configuration of claim 11, further comprising at least one second buffer tube formed from a piece of wound composite tape and positioned contiguous to said first buffer tube;

at least one optical fiber disposed in said at least one second buffer tube; and an outer jacket surrounding said first and second buffer tubes to form a first stack.

5

17.0

U.S. Patent Application
Inventors: Nicholas V. Nechitailo

Our Ref.: A7965

13. The optical fiber cable configuration of claim 12, wherein said outer jacket is formed from a piece of wound composite tape.

- 14. The optical fiber cable configuration of claim 13, further comprising a protective sheath which contains said first stack and a second stack, and wherein said first and second stacks are formed to have a triangular shape, such that said stacks are in a radial arrangement with respect to a center of said protective sheath.
- 15. The optical fiber cable configuration of claim 14, wherein said protective sheath is formed from a wound piece of composite tape.
 - 16. An optical fiber cable configuration, comprising: outer protective sheath;

a plurality of stacks which are stranded to be radially positioned within said outer protective sheath, wherein each of said plurality of stacks includes a plurality of buffer tubes which contain an optical fiber and each of said plurality of stacks is formed to have a triangular shape, wherein at least one of said outer protective sheath, said stacks, and said plurality of buffer tubes, has an outer support portion which is formed from a wound piece of composite tape.

17. A method of making an optical fiber configuration, comprising: providing a piece of composite tape; applying gel to a first side of said composite tape;

ź,

5

U.S. Patent Application Inventors: Nicholas V. Nechitailo



Our Ref.: A7965

depositing an optical fiber on said composite tape;

rolling said composite tape to form a buffer tube so that said optical fiber is contained within said buffer tube, wherein said composite tape provides support to said optical fiber.

18. The method of making an optical fiber configuration of claim 17, further comprising:

bundling a plurality of said buffer tubes with a composite tape to form a stack having a triangular shape; and

positioning, radially, a plurality of stacks within an outer protective sheath formed from a wound piece of composite tape.

19. The method of making an optical fiber configuration of claim 17, wherein said rolling is done helically.

 $\alpha J_{\alpha \nu}$